

Overview and Basic System Use

Updated for SOS 5.0

Definitions:

1. **Content** – General term that we use for anything that can be displayed on the sphere and should be stored somewhere in /shared/sos/media - mp4, jpg, png, pip, overlay, label, colorbar...
 2. **Dataset** – A packaged collection of coherent content, which may include multiple layers, labels, legends, colorbars, etc...
 - a. **Texture** – A single, static image on the sphere that rotates
 - b. **Time series** – animates through time and by default doesn't rotate. Can be an image sequence or a mpeg4
 - i. **Image sequence** – a directory of images that are played in sequence
 - ii. **MPEG4** – the only video format accepted by SOS
 3. **Presentation playlist** – A collection of datasets grouped together in a list for a presentation
 4. **Playlist.sos** – A text file that specifies how a dataset should be displayed on the sphere. Each dataset must have its own playlist.sos file
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1. Basic Setup
 - a. SOS is two computers, four video projectors, one sphere
 - b. Four video projectors
 - i. One to four starting with number one closest to the computer and then going counterclockwise
 - c. One six-output graphics cards to support the four projectors and a second graphics card to run the user interface
 - d. The computer is responsible for:
 - i. running the main user interface to the system
 - ii. real time data collection
 - iii. providing the interface to the automation control protocol
 - e. All Linux operating system Ubuntu (currently version 12.04)
 - f. "hot" spare is identical to the primary computer as a backup system
 - g. All of the SOS software is written and maintained by NOAA.
 2. Turning the System On and Off
 - a. Primary computer should be always on
 - i. It will automatically log into the user sosdemo
 - b. Spare computer doesn't have to be on, but should be for backups
 - c. To change users log out and then log in using username and password
 - d. Power button icon in the top right menu bar for logging in and out
 - e. To shut the system off use the same icon
 - f. To force a sudden power off hold the power button for 5 seconds

3. SOS Stream GUI
 - a. Launched by icon on the Desktop labeled “SOS Start”
 - b. Four menus: “SOS,” “File,” “Library,” and “Controls.”
 - c. Includes information about current dataset, buttons similar to those on a VCR, the current playlist, and a search bar
 - d. Menu Options
 - i. SOS Menu - Only has two items, “About SOS” and “Quit.”
 - ii. File Menu - open playlists and content, download missing data, turn on autorun
 - iii. Library Menu - browse content and update library
 - iv. Controls Menu - options for orienting the sphere
 - v. Utilities Menu - maintenance and support options
 - e. For more information about the currently loaded dataset (and where to find it in your computer), click the “Details” button in the SOS Stream GUI
 - f. The Search Bar will generate a playlist from user search criteria
 4. Opening a Playlist
 - a. In the SOS Stream GUI
 - i. Normal-demo.sos is automatically opened when SOS is launched
 - ii. Click on the “File” menu and select “Open Playlist”
 - iii. Playlists are saved in the directory /home/sos/sosrc for the user sos and /home/sosdemo/sosrc for the user sosdemo.
 - iv. A warning message will pop up for any errors
 - v. Click a dataset to load it on the sphere
 - vi. Yellow while loading
 - vii. Green if it loads properly
 - viii. Red if it is unable to load
 - ix. Make sure to reload playlist if any changes are made
 - b. With iPad
 - i. Tap the folder icon at the top left on the presentation tab and then tap the playlist you want to load.
 - ii. Use the alphabet on the right to jump through the list
 - iii. Make sure to reload playlist if any changes are made
 5. Presenting a Playlist
 - a. In Autorun mode the system will run through the playlist on an automatic timer
 - i. Can be turned on through GUI or iPad
 - b. Can control system from the keyboard of the primary computer
 - i. Slider bar indicates frame number
 - ii. Control menu documents keyboard shortcuts
 - c. SOS Remote app for iOS devices such as iPads and iPhones
 - i. Can open playlists, browse library, annotate, layer, and zoom

6. Using the SOS Remote App
 - a. SOS Remote App is freely available through the Apple App Store
 - b. Presentation tab - for control sphere and giving presentations
 - c. Data Catalog tab - for navigating the library by searching or browsing
 - d. Playlist Builder tab - for creating playlists
 - e. Settings tab - for connecting the iPad and syncing the library
 - i. The iPad must be on the same Wi-Fi network as the SOS system
 - f. For more information use SOS Remote App Manual found on our website:
Support > Manuals > SOS Remote App (iPad) pdf
7. Organization of Data
 - a. Seven main categories
 - i. Air
 - ii. Extras
 - iii. Land
 - iv. People
 - v. Snow and Ice
 - vi. Space
 - vii. Water
 - b. There are many subcategories within each category
 - c. Datasets can be in multiple categories and subcategories
 - d. Each dataset is in its own folder which contains (if available):
 - i. **JPEG or PNG file named for resolution (if still image)**
 - ii. Folder with images named for the resolution of the images
 - iii. An equatorial cylindrical equidistant video (.mp4) of the data
 - iv. Text file labeled labels.txt
 - v. **Text file labeled playlist.sos**
 - vi. Color bars and other supporting images
 - vii. Media folder with thumbnails, videos, and supporting documents
 - e. A uniform naming convention has been used among the folders
 - f. Datasets that are related to one another are all grouped into one folder
 - g. NOTE: folder for datasets are organized based on the old category system
 - i. You can find the location of a dataset by clicking “Details” when on the SOS Stream GUI when it’s loaded, or by clicking “Data Info” on the iPad.
8. Two Types of Datasets
 - a. Textures consist of one still image that can be set to rotate on the sphere
 - b. Time series are either image sequences or MPEG4 files that animate
9. Making or editing a Dataset
 - a. Can be done with the **Visual Playlist Editor** or by hand.
 - b. Needs to be stored in the /shared/sos/media folder directory

- c. More information on making “content” is in the content creation manual found on our website - Support > Manuals > Content Creation Guidelines
10. Playlist.sos (text file for each dataset, found in each dataset folder)
- a. Each dataset must have a playlist.sos to specify how the data is displayed on the sphere
 - b. Any specifications that are made in the playlist.sos will be used in all of the playlists that include that dataset
 - c. Only one dataset per playlist.sos file
 - d. At very minimum, “name” and “data” must be included
 - e. Anything with a “#” in front of it is considered a comment and won’t affect how the dataset is displayed
 - f. Can be multiple playlist.sos files in one folder for different versions of the dataset, the file names simply need to start with playlist and end with sos
11. Presentation Playlists
- a. A presentation playlist is an ordered list of datasets
 - b. All playlist file names have to end with the extension .sos and are stored in either /home/sos/sosrc or /home/sosdemo/sosrc depending on the user
 - c. Basic format of a playlist is a file that points to all of the playlist.sos files for the datasets
 - d. Make personal changes in your demo playlist under the “include =”.
 - e. Presenter notes can be added to a playlist using the marker #> before each line
 - i. Example: /shared/sos/media/extras/live_programs/mitigation_adaptation (move to sosrc)
12. Making a Presentation Playlist
- a. First method for making playlist is to manually type the playlist in a text editor and save the file with a .sos extension
 - b. Second method is to use the playlist editor, which is a drag and drop program
 - i. Can be launched from the “Playlist Editor” icon on the Desktop, or through the SOS Stream GUI with the “Edit Playlists” option under “File.”
 - ii. Two main tabs at the top, “Playlists” and “Clip Library.”
 - iii. Playlist editor saves continuously, so there is no “Save” button.
 - c. Third method is to use the Playlist Builder, which is on the SOS website
 - i. Can be launched from the Dataset Description pages on the website
 - ii. Save file and manually transfer to the SOS computer
 - iii. Cannot modify datasets with the Playlist Builder
 - d. Fourth method is to use the Playlist Builder on the iPad
 - i. Always presenters to create and modify playlists on the fly
 - ii. Has interface for adding presenter notes
13. Giving a Presentation

- a. Can be broad and include datasets from all of the categories, or narrowly focused on a topic such as climate change or the solar system
- b. The preferred way to present Science On a Sphere® is with a live presenter to lead the audience through a playlist using either the Wii remote or the SOS Remote app.
- c. Standard presentation at the David Himes Planet Theater at NOAA in Boulder, CO is 30 – 45 minutes and includes 10 datasets on average
- d. SOS Remote App offers many tools for enhancing a live docent presentation including annotation, zooming, and layering

14. Autorun

- a. The system displays each dataset for a default three minutes
- b. Should have supporting audio or text so that the audience can understand the dataset
- c. Many sites give live presentations with the sphere throughout the day, and in between presentations leave the sphere on Autorun
- d. Don't use iPad while autorun is on

15. SOS Add-ons

- a. Side wall projectors or flat screen televisions can be linked to the Science On a Sphere® software to sync a PowerPoint presentation with a SOS demo
- b. Kiosk software can be used for a supported visitor experience

16. Translations

- a. The iPad App and the Kiosk include localized user interfaces
 - i. Dynamic translation of text in labels, buttons, and dialog boxes to a native language.
- b. The SOS Data Catalog supports localization of dataset names and descriptions, major and sub categories, and keywords
- c. More information can be found on the SOS website: Support > Manuals > NOAA Translations Guide

17. Audience Considerations

- a. Consider if the audience will sit in one location or move about the sphere
- b. If audience is distributed, allow a dataset to play through several times, rotating it so that everyone gets to see everything

18. SOS Users Collaborative Network

- a. NOAA Office of Education List Serve
- b. SOS Yahoo List Serve
- c. SOS Education Forum